

1 I claim:

- 2       1. A motorcycle having a transmission system that accommodates an enlarged rear tire,  
3 the motorcycle comprising in combination:
  - 4       a. a support frame for supporting a rider, the support frame extending along a longitudinal  
5 axis between opposing front and rear ends;
  - 6       b. a rear wheel rotatably coupled to the rear end of the support frame, the rear wheel  
7 including a rear wheel drive gear for applying torque to the rear wheel, the rear wheel drive gear  
8 extending substantially in a first vertical plane spaced apart from the longitudinal axis of the  
9 support frame by a first offset distance;
  - 10       c. an engine mounted to the support frame for generating a turning force to propel the  
11 motorcycle;
  - 12       d. a transmission mounted to the support frame and coupled to the engine for selectively  
13 coupling the turning force generated by the engine to a transmission output gear, the transmission  
14 output gear extending substantially in a second vertical plane spaced apart from the longitudinal  
15 axis of the support frame by a second offset distance, the second offset distance being smaller  
16 than the first offset distance;
  - 17       e. an intermediate shaft rotatably secured to the support frame, the intermediate shaft  
18 including a power input gear extending substantially in said second vertical plane and spaced  
19 apart from the longitudinal axis of the support frame by said second offset distance, said  
20 intermediate shaft also including a power output gear that rotates together with the power input  
21 gear, the power output gear extending substantially in said first vertical plane and spaced apart  
22 from the longitudinal axis of the support frame by said first offset distance;
  - 23       f. a first drive belt coupling the transmission output gear to the power input gear of the  
24 intermediate shaft; and
  - 25       g. a second drive belt coupling the power output gear of the intermediate shaft to the rear  
26 wheel drive gear.

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1       2. The motorcycle recited by claim 1 wherein said first and second drive belts are first  
2 and second chains, respectively, wherein said transmission output gear and power input gear are  
3 sprockets that engage the first chain, and wherein said power output gear and rear wheel drive  
4 gear are sprockets that engage the second chain.

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6       3. The motorcycle recited by claim 1 wherein said first and second drive belts are first  
7 and second flexible belts each having a toothed inner surface, said transmission output gear and  
8 power input gear are toothed drive belt pulleys that engage the first toothed drive belt, and  
9 wherein said power output gear and rear wheel drive gear are toothed drive belt pulleys that  
10 engage the second toothed drive belt.

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12       4. The motorcycle recited by claim 1 wherein the intermediate shaft is rotatably secured  
13 to the support frame by a bearing assembly.

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15       5. The motorcycle recited by claim 1 wherein the support frame includes a tail frame  
16 portion for supporting the rear wheel, the tail frame portion being pivotally secured to the support  
17 frame about a tail pivot axis, and the rear wheel being rotatably secured to the tail frame portion.

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19       6. The motorcycle recited by claim 5 wherein the intermediate shaft is rotatably secured  
20 to the support frame about a rotational axis that is coincident with said tail pivot axis.

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22       7. The motorcycle recited by claim 1 wherein the engine and transmission each have a  
23 center of mass, wherein the engine's center of mass is located along the longitudinal axis of the  
24 support frame, and wherein the transmission's center of mass is located along the longitudinal  
25 axis of the support frame.

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